AMENDMENTS TO THE SPECIFICATION

Please amend the TITLE OF THE INVENTION as follows:

PROBE DEVICE FOR ELECTRICAL TESTING AN INTEGRATED CIRCUIT DEVICE AND PROBE CARD USING THE SAME

Please replace paragraph [0001] of the Specification with the following replacement paragraph:

[0001] ~~The present invention relates~~ Embodiments of this disclosure relate to a probe device for electrical testing an integrated circuit device and probe card using the same, and more particularly to a probe device for electrical testing an integrated circuit device and probe card capable of adjusting the probe pressure applied on an integrated circuit device under test by the probe and aligning the probe along the center line automatically.

Please replace paragraph [0006] of the Specification with the following replacement paragraph:

[0006] ~~The objective of the present invention~~ One objective of this disclosure is to provide a probe device for electrical testing an integrated circuit device and probe card capable of self adjustable of each probe pressure applied on an integrated circuit device under test by the probe and aligning the probe along the center line automatically.

Please replace paragraphs [0028] through [0030] of the Specification with the following replacement paragraphs:

[0028] FIG. 1 illustrates a probe device 10 for electrical testing an integrated circuit device according to the first embodiment of ~~the present invention~~this disclosure. As shown in FIG. 1, the probe device 10 comprises an insulative body 12 with a circular opening 14, two supporters 20 positioned in the opening 14, a probe 26 positioned in the supporter 20, and a first conductive wire 28 positioned in the insulative body 12 and electrically connected to the supporter 20. The supporter 20 is a helical spring with ~~its~~ a spiral coil 23 extending substantially at the same plane and having an inner end 22 connected to the probe 26 and ~~its~~ an outer end 24 connected to the insulative body 12. Particularly, there are two supporters 20 positioned substantially in parallel inside the opening 14 of the insulative body 12. When the probe 26 deviates from the center of the supporter 20, the lateral elasticity of the helical spring will push the probe 26 back to central position automatically, i.e., the helical spring can limit and restrict the probe 26 to move substantially only in vertical direction to avoid the disadvantage caused by lateral movement of the probe as in the ~~prior~~ conventional art.

[0029] Furthermore, when the probe tip of the probe 26 contacts an integrated circuit device under test, the vertical elasticity of the ~~helical spring~~ spiral coil 23 can automatically adjust the probe pressure applied by the probe 26 on the integrated circuit device. That is, since the present invention uses the elastic supporter 20 to support the probe ~~20~~26, the contact between the probe 26 and the integrated circuit device is a soft contact rather than a hard contact, which will damage the integrated circuit device. The probe 26 and the supporter 20 are made of an elastic and conductive material. Preferably, the probe 26 and the supporter 20 are made of a materials selected from the group consisting of copper, nickel, cobalt, tin, boron, phosphorous, chromium, tungsten, molybdenum, bismuth, indium, cesium, antimony, gold, silver, rhodium, palladium, platinum, ruthenium and their alloys. An electric signal of the integrated circuit device under test is acquired by the probe 26, and then outputs via the supporter 20 and the first conductive wire 28 outwards.

[0030] FIG. 2(a) illustrates a probe device 40A according to the second embodiment of the present invention. As shown in FIG. 2(a), the probe device 40A comprises an insulative body 42 with a quadrangular opening 44, two supporters 50A positioned in the opening 44, a probe 56 positioned in the supporter 50A, and an first conductive wire 58 positioned in the insulative body 42 and electrically connected to the supporter 50A. The supporter 50A comprises four beams 52 positioned in a radial manner with the probe 56 substantially at the center and the included angle between two adjacent beams 52 is the same, substantially 90 degrees. That is, four beams 52 form a cross structure, while the probe 56 is located at the center of the cross structure. One end of the beam 52 is connected to the probe 56, the other end is connected to the insulative body 52, and one of the four beams 52 is connected to the first conductive wire 58 and the probe 56 electrically. Particularly, there are two supporters 50A positioned substantially in parallel inside the opening 44 of insulative body 42.

Please replace paragraphs [0032] through [0035] of the Specification with the following replacement paragraphs:

[0032] FIG. 2(c) illustrates a probe device 40C according to the ~~third~~ fourth embodiment of ~~the present invention~~ this disclosure. Compared with FIG. 2(a), the supporter 50C of the probe device 40C shown in FIG. 2(c) comprises an upper and a lower square helical springs. The inner end of the square helical spring is connected to the probe 56, and the outer end is connected to the insulative body ~~52~~42. Preferably, the probe 56 is located at the center of the square helical spring. The first conductive wire 58 is connected the outer end of upper helical spring electrically for transmitting test signal to the probe 56, or transmitting the electric signal acquired by the probe 56 from an integrated circuit device under test outwards.

[0033] FIG. 3(a) illustrates a probe device 60A according to the fifth embodiment of the present invention. As shown in FIG. 3(a), the probe device 60A comprises an insulative body 62 with a hexagonal opening 64, two supporters 70A positioned in the opening 64, a probe 76 positioned in the supporter 70A, and a first conductive wire 78 positioned in the insulative body

62 and electrically connected the supporter 70A. The supporter 70A comprises six beams 72 and two rings 74 connecting the ~~four~~ six beams 72. One end of the beam 72 is connected the probe 76, the other end is connected to the insulative body 62, and one of the beams 72 is connected to the first conductive wire 78 and the probe 76 electrically. The ~~four~~ six beams 72 are positioned in a radial manner with the probe 76 substantially at the center, and the included angle between two adjacent beams 72 is the same, substantially 60 degrees.

[0034] FIG. 3(b) illustrates a probe device 60B according to the sixth embodiment of the present invention. Compared with FIG. 3(a), the supporter 70B of the probe device 60B shown in FIG. 3(b) comprises an upper and lower hexagonal helical springs. The inner end of the hexagonal helical spring is connected to the probe 76, and the outer end is connected to the insulative body ~~72~~62. Preferably, the probe 76 is located at the center of the hexagonal helical spring. The first conductive wire 78 is connected the outer end of upper hexagonal helical spring electrically for transmitting test signal to the probe 76, or transmitting the electric signal acquired by the probe 76 from an integrated circuit device under test outwards.

[0035] FIG. 4 illustrates a probe device 80 according to the seventh embodiment of the present invention. As shown in FIG. 4, the probe device 80 comprises an insulative body 82 with a triangular opening 84, two supporters 90 positioned in the opening 84, a probe 96 positioned in the supporter 90, and a first conductive wire 98 in the insulative body 82 and electrically connected to the supporter 90. The supporter 90 comprises ~~six~~ three beams 92 and two rings 94 connecting the ~~six~~ three beams 92. One end of the beam 92 is connected the probe 96, the other end is connected to the insulative body 82, and one of the beams 92 is connected to the first conductive wire 98 and the probe 96 electrically. The ~~six~~ three beams 92 are positioned in a radial manner with the probe 96 substantially at the center, and the included angle between two adjacent beams 92 is the same, substantially 120 degrees.

Please replace paragraphs [0043] through [0044] of the Specification with the following replacement paragraphs:

[0043] FIG. 12 illustrates a probe head 250 according to the fourth embodiment of the present invention. As shown in FIG. 12, the probe head ~~240~~ 250 comprises a plurality of probe device 60A shown in FIG. 3(a), the arrangement of the probe device 60A of the probe head 250 is designed to correspond to the pad of the integrated circuit device under test. In yet another alternate embodiment, the probe head 250 can consist of the probe device 60B shown in FIG. 3(b), whose supporter 70B consists of two helical springs. The connection of the probe head 250 and a circuit board can use the design as shown in FIG. 6 or FIG. 9 alternatively to connect the conductive wire 78 to the pad of the circuit board electrically.

[0044] FIG. 13 illustrates a probe head 260 according to the fifth embodiment of the present invention. As shown in FIG. ~~12~~13, the probe head ~~240~~ 260 comprises a plurality of probe devices 80 shown in FIG. 4, and the arrangement of the probe device 80 of the probe head 260 is designed to correspond to the pad of the integrated circuit device under test. The connection of the probe head 260 and a circuit board can use the design as shown in FIG. 6 or FIG. 9 alternatively to connect the conductive wire 98 to the pad of the circuit board electrically.